

# Understanding Real-Time Bidding (RTB) From the Publisher Perspective

PubMatic

Technical level of white paper:





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## Executive Summary:

# RTB From The Publisher Perspective

Real-Time Bidding, or RTB, is sure to be one of the most frequently used online advertising buzzwords of 2010. Many advertising experts have argued that it is going to fundamentally change the course of online advertising as we know it. It has even been referred to as the next revolution in advertising for the benefits it will provide to all players in the ecosystem—the publisher, the user, and the advertiser.

Real-time bidding allows advertisers to reach the right user, in the right place, at the right time—and assign an individual value to a particular ad impression. Leveraging advanced technology offered by a relatively small but quickly growing number of companies, advertisers place bids on reaching specific users dynamically, and on an impression-by-impression basis.

PubMatic has found that publishers monetizing ad inventory via RTB can receive an increased eCPM because of the improved campaign performance that RTB offers. In the case of one particular US Entertainment publisher, the publisher was able to achieve a 106% increase in eCPM over a six-month period.

Along with the clear benefits of RTB, publishers must be cognizant of the potential pitfalls associated with this emerging media buying trend. RTB was originally conceived as an advertiser-focused solution, and publishers must take multiple issues into account in order to make their businesses successful in an RTB-enabled world.

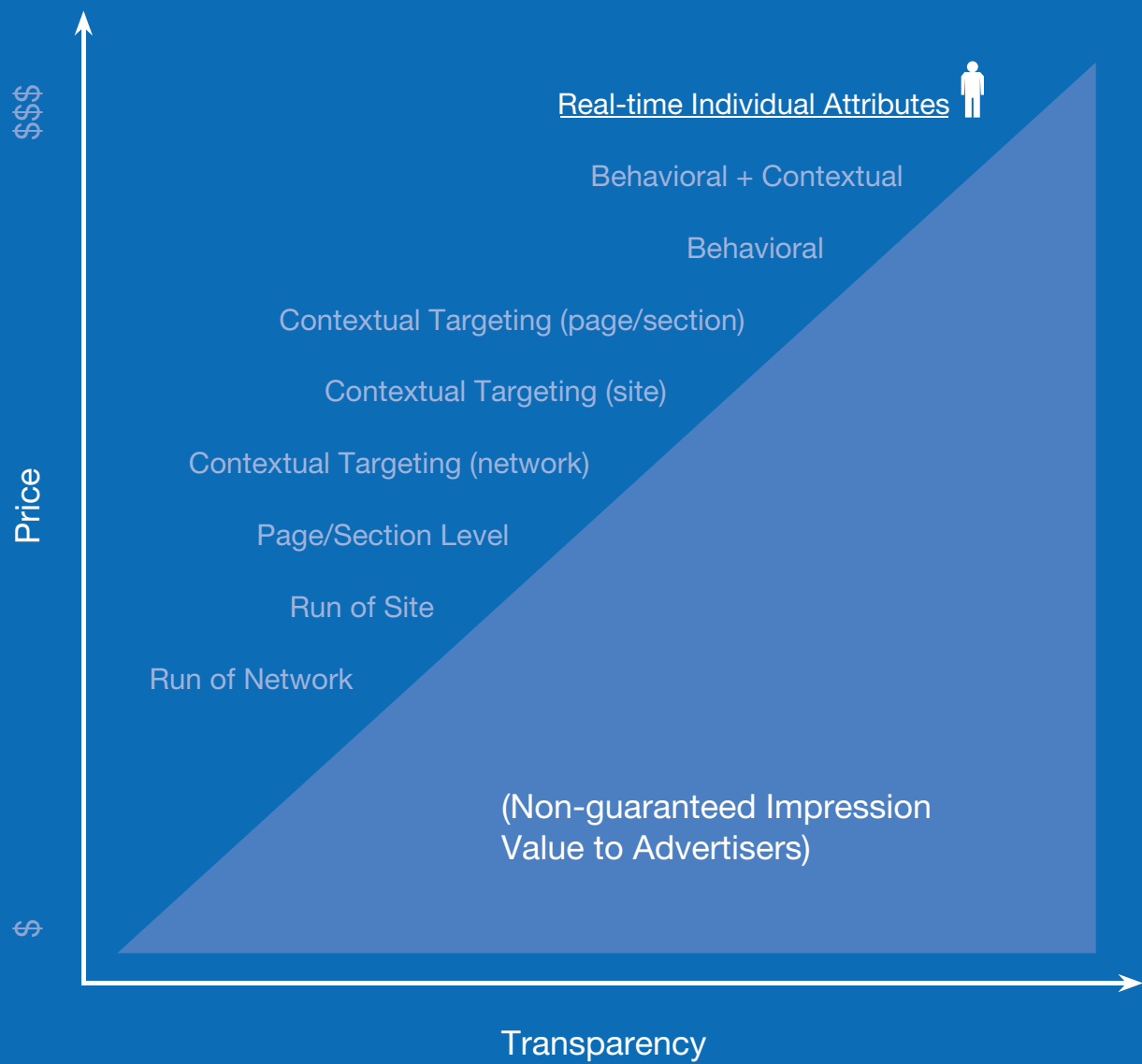
PubMatic estimates that less than 1% of online advertising was purchased via RTB in 2009, and that will grow to 3-5% in 2010. Because RTB is the fastest growing segment of US online advertising, it's imperative that publishers understand the RTB landscape and how to successfully harness RTB ad dollars to their benefit.

Along with the clear benefits of RTB, publishers must be cognizant of the potential pitfalls associated with this emerging media buying trend.

# Unlocking the True Value of the Impression

The most important promise that RTB holds for publishers is increasing the value of ad impressions. With RTB, advertisers have the greatest level of transparency available on the individual user in real-time, which can significantly increase the value of each ad impression and the corresponding publisher CPM.

## Transparency Increases the Value of the Impression



Having greater transparency about the user in real-time provides great insight to advertisers, but it is the difference in how media is bought and sold with real-time bidding that is the true game changer.

Currently, most digital media buying is done based on assumptions about certain audiences. For example, audiences bought through ad networks and ad exchanges are often purchased in buckets or by segment. How the audiences are categorized in certain segments depends on who is selling them. And while some audience sellers do a better job of segmenting users than others, so long as individual impressions are being grouped into a bucket and sold at a pre-negotiated price, they are not being fairly valued and are often sold at under-valued prices, as shown.

So long as the individual impressions are being grouped into a bucket and sold at a pre-negotiated price, they are not being fairly valued.



In **Example 1**, a luxury car advertiser is looking for a very specific audience type and is willing to pay a premium price to reach a specific user that is highly qualified. The more qualified the user, the more the advertiser is willing to pay. On the right side of the example below, the advertiser (or rather the technology company placing bids on behalf of the advertiser) can see unique characteristics about the user and therefore is willing to pay a \$3.90 CPM to target that user.

On the left hand side, the same user would have been bucketed into an auto-buying segment and priced according to the segment price, which is far lower than what was paid via RTB for the individual.

#### Example 1: Same User, Same Campaign (Purchased Differently)

##### Segment Based Buying

Pre-negotiated price



User "X"

With segment based buying advertisers set parameters for users to be grouped into certain audiences before the campaign. While data is collected in order to group the user into a specific audience, it is not in real-time.

**Segment Value to Luxury Car Brand:**  
**\$1.75 CPM**

##### Impression Level Buying (RTB)

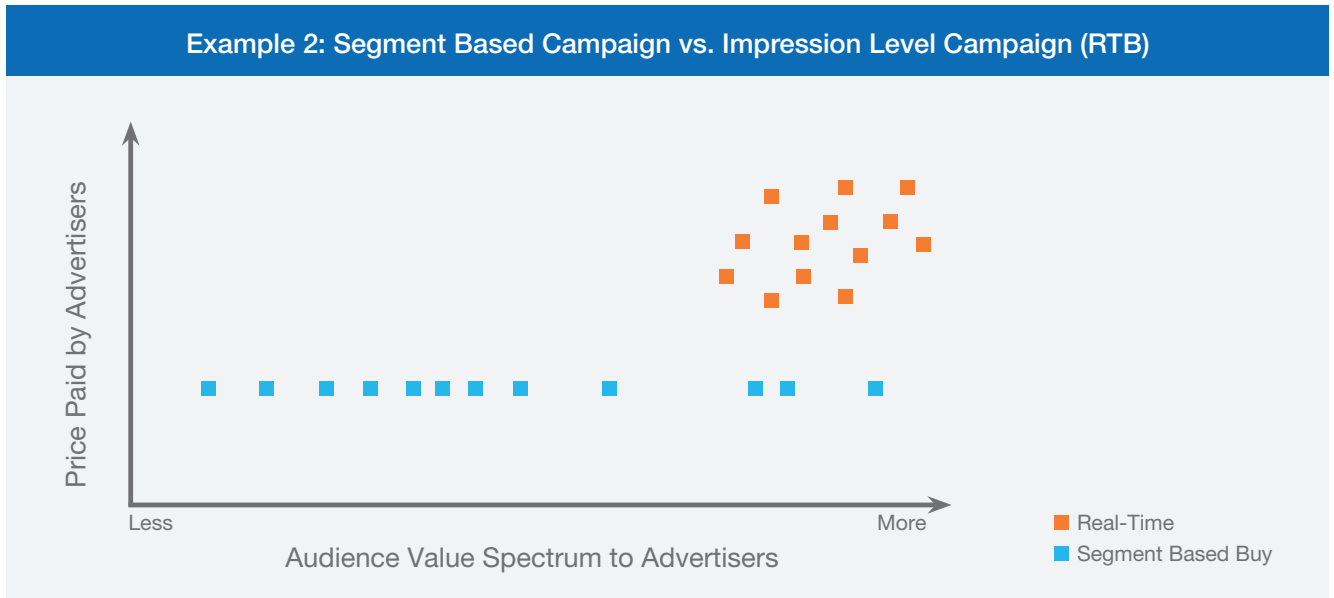


User "X"

- ☒ Has visited multiple auto sites within the past few days
- ☒ Is currently reading a vehicle financing page
- ☒ IP address is Aspen, Colorado
- ☒ Browser is Apple's Safari
- ☒ Time is 9:30 a.m. on a Saturday

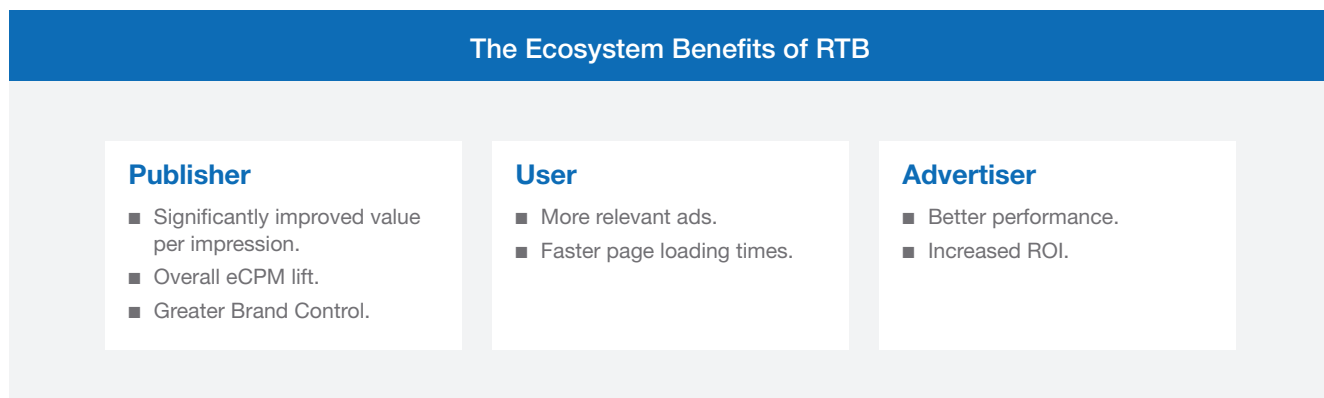
**Individual Value to Luxury Car Brand:**  
**\$3.90 CPM**

**Example 2** below shows the ongoing luxury car ad campaign on a larger scale. Because RTB is conducted in real-time, advertisers, or their proxy vendor that facilitates their media buying, can buy impressions to reach specific users or reject them as the campaign is in progress. Therefore, in a real-time situation the luxury car advertiser would likely choose to reach many of the same users that would have been segmented for them as auto buyers in a pre-negotiated bucket buy. However, having more information about each individual user, the advertiser would also likely want to reach users that didn't fall into the pre-defined auto buyer segment while also rejecting some of the impressions that would have made it into the segment. More importantly, the pricing would be different based on the unique characteristics of each user as opposed to an average across the segment.



In the long run, advertisers that have better performing campaigns can pay more to target the right users. According to Turn, a company that facilitates RTB transactions for advertisers by leveraging inventory from sell-side platforms such as PubMatic, advertisers are seeing up to 135% improvement on click-through rates and 150% improvement on conversion rates.

Better performing campaigns have a positive impact on all parties involved, not just for the advertiser. Below are a few key benefits that RTB brings to the publisher, the user, and the advertiser.

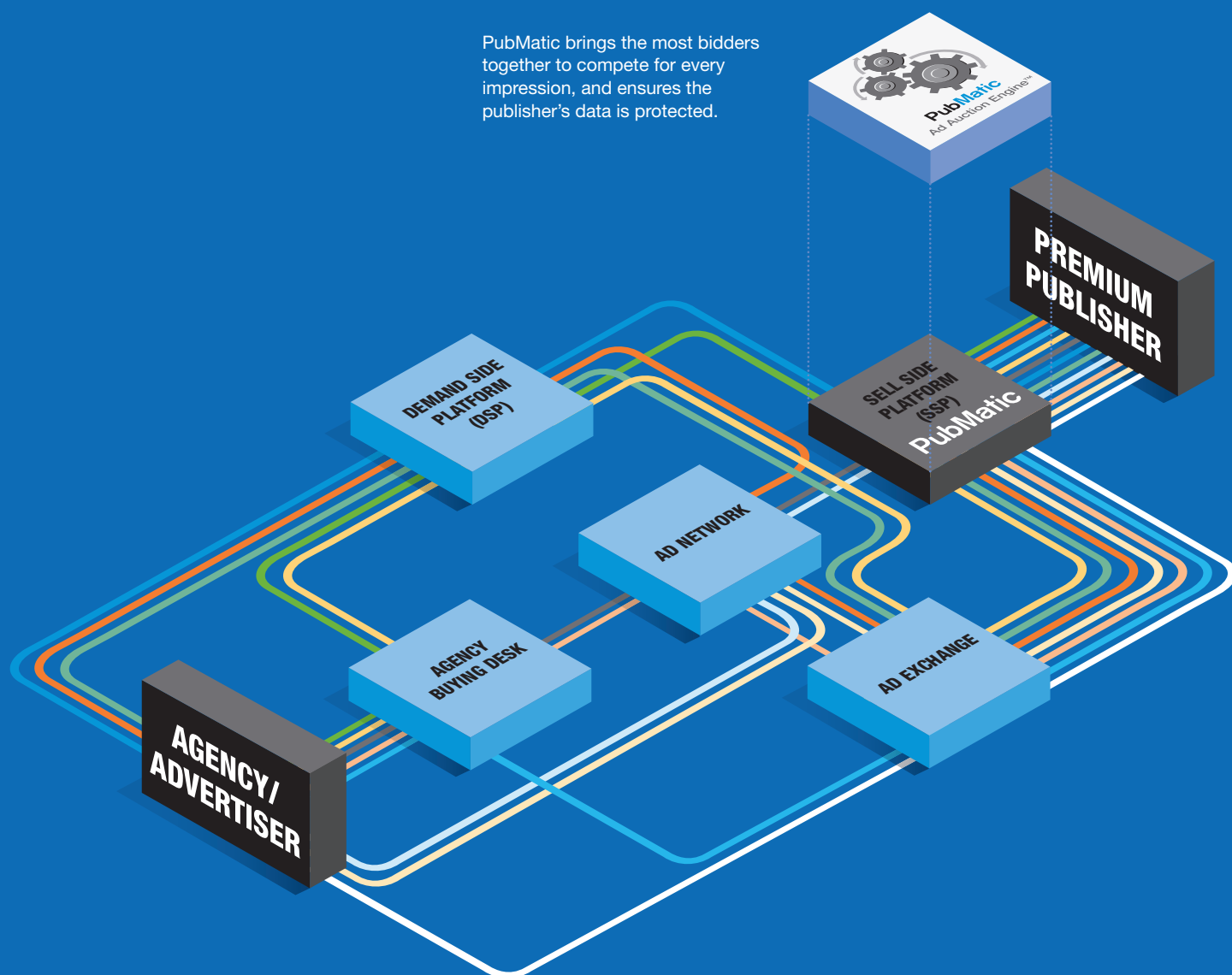


# Understanding the RTB Ecosystem

Real-time bidding is very much still in its infancy, but the number of companies that help advertisers and publishers leverage RTB is growing rapidly. In 2008, the number of companies talking about RTB could be counted on one hand. In 2009, the number of companies involved in real-time bidding increased dramatically, but each category in the RTB ecosystem plays a significant role and it is important for publishers to understand those roles.

# The Many Possible Flows of RTB

Each colored line represents a possible RTB flow scenario.



## PubMatic's Role (Sell Side Platform)

<b>About</b>	PubMatic is a sell side platform, also known as a publisher yield optimizer, which works with publishers to increase their advertising revenue and help manage ad inventory. PubMatic built its RTB technology for the exclusive benefit of the publisher.
<b>PubMatic's Ad Auction Engine™</b>	is described in detail in the following section, accepts real-time bids on behalf of the publisher, but those bids are only accepted if the bid is higher than all of the other demand sources that are included in the auction for every single impression.
<b>RTB Partners Include</b>	Demand side platforms (DSPs), ad networks, ad exchanges, publishers
<b>RTB Fiduciary Obligation</b>	Publisher
<b>RTB Role</b>	Sell side platforms are a conduit to facilitate demand from buy side platforms.
<b>RTB Technology</b>	PubMatic's Real-Time Bidding API allows demand partners including DSPs and RTB-enabled ad networks and exchanges to leverage the inventory provided by PubMatic's publishers.

## Agency Buying Desks

<b>About</b>	Agency buying desks can be thought of as a specialized arm of larger media buying agencies that focus on media trading and RTB. Each desk represents a specific agency.
<b>RTB Partners Include</b>	Parent agency, advertisers, demand side platforms (DSPs), ad networks, ad exchanges
<b>RTB Fiduciary Obligation</b>	Parent agency/ Advertiser
<b>RTB Role</b>	Agency buying desks generally serve as the liaison between the advertiser or parent agency and the platforms they use to facilitate real-time bidding. For example, an agency buying desk may work with a DSP to facilitate an RTB campaign.
<b>RTB Technology</b>	Agency buying desks do not have core RTB technology to facilitate campaigns in real-time—for that they use a 3rd party company, usually a DSP. However, some enable buyers, through a single interface, to procure inventory from many sources, add layers of advertiser and 3rd party data, and manage targeting, and analytics.

Agency Buying Desk	Parent Agency
B3	WPP / Group M
Adnetik	Havas Digital
Cadreon	IPG Mediabrands
Varick Media Management	MDC Partners
-	Omnicom Media Group
ATOM Systems	Razorfish
VivaKi	Publicis

### RTB in Market (representative list)

- [X+1]
- AppNexus
- AudienceScience (also under Ad Network)
- DataXu
- Invite Media
- Lucid Media (also under Ad Network)
- MediaMath
- Triggitt
- Turn (also under Ad Network)

## Demand Side Platforms (DSPs)

<b>About</b>	Demand side platforms (DSPs) enable buyers to connect directly to multiple sources of inventory supply and provide such benefits as workflow simplification, integrated reporting, algorithmic buying optimization, and the ability to make impression-level bids (RTB).
<b>RTB Partners Include</b>	Agency, agency buying desks, advertisers, sell side platforms (SSPs), ad exchanges, ad networks
<b>RTB Fiduciary Obligation</b>	Agency, agency buying desk, advertiser
<b>RTB Role</b>	DSPs are the foremost experts in media trading and RTB for the advertiser and use their core technology to facilitate RTB campaigns. At present time, no DSPs are locked down to any single agency, instead, they work with multiple agencies to provide the technology and expertise needed to support RTB campaigns.
<b>RTB Technology</b>	The DSP technology is what truly separates DSPs from the agency buying desks. While not all DSP technology is created equal, most DSPs tend to have their own proprietary algorithms with help to fine tune advertising campaigns in real-time in order to produce the greatest ROI for their partners.



## Ad Networks

<b>About</b>	Ad networks aggregate supply (inventory) and demand (ads) and add their own and 3rd party data as well as targeting and optimization technology.
<b>RTB Partners Include</b>	Agency, agency buying desks, advertisers, DSPs, Sell side platforms (SSPs), Ad Exchanges, Ad Networks, publishers
<b>RTB Fiduciary Obligation</b>	No single one (works for both the advertiser and publishers)
<b>RTB Role</b>	Ad networks are slowly adding RTB capabilities in order to facilitate RTB transactions on behalf of agencies, advertisers, and agency buying desks. Ad networks are increasingly competing with DSPs for the same advertiser dollars.
<b>RTB Technology</b>	Similar to DSPs, ad networks with RTB rely on proprietary algorithms to determine the value of a given ad impression and deliver superior ROI performance to their advertising clients.

### RTB in Market (representative list)

- AudienceScience (also under DSP)
- Fox Audience Network (FAN)
- Lucid Media (also under DSP)
- Rocket Fuel
- Lucid Media
- Turn (also under DSP)
- Advertising.com

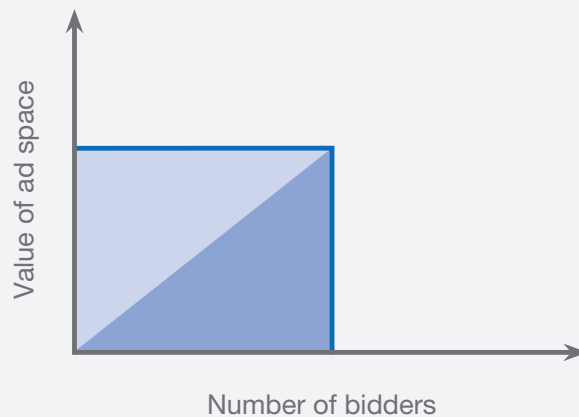
Ad Exchanges	
<b>About</b>	Ad exchanges are powered marketplaces where numerous ad networks, publishers, advertisers and other sources of supply and demand meet to buy and sell media in continuous real-time bidded auctions. Exchanges provide workflow and reporting services and tools for buyers and sellers, as well as access to data suppliers and targeting, optimization and analytic technology and services.
<b>RTB Partners Include</b>	Agency, agency buying desks, advertisers, DSPs, Sell side platforms (SSPs), Ad Exchanges, Ad Networks, publishers
<b>RTB Fiduciary Obligation</b>	No single one (works for both the advertiser and publishers)
<b>RTB Role</b>	The majority of ad exchanges have built RTB capabilities for ad buyers (ad networks, ad agencies, advertisers) as opposed to ad sellers.
<b>RTB Technology</b>	Most ad exchange RTB technology is nascent and still in a scale-up mode with the eventual goal of making all inventory in an exchange available to buyers via RTB. Look for ad exchanges to scale up the amount of biddable inventory significantly in 2010.

RTB Enabled Ad Networks	Product
AdBrite	AdBrite Exchange
Contextweb	ADSDAQ
Google	Ad Exchange (DoubleClick)
Microsoft	AdECN
OpenX	Open Exchange
Yahoo!	Right Media Exchange

# Ensuring High Publisher eCPM with RTB

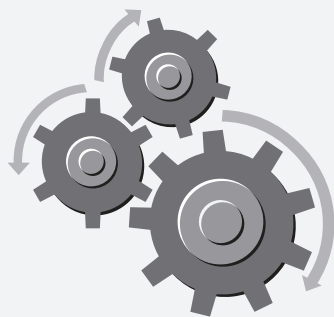
A truly competitive bidding environment is essential for ensuring consistent and continuous revenue growth. PubMatic has seen significant eCPM improvements for its publishers that are participating in RTB campaigns, but because this is a bidding environment, a high price is not guaranteed. RTB is still in its infancy, and the number of RTB advertisers is relatively small, so without enough advertisers competing to reach the same user, a lucky advertiser could get the ad space for below market value.

### Increased Bidders Drives Value of Ad Space



In order to ensure there are enough bidders to keep the value of the publisher's ad space high, PubMatic's Ad Auction Engine™ brings the greatest number of bidders together in a real-time auction for every impression.

### Three Categories of Buyers



**PubMatic**  
Ad Auction Engine™

1. Ad Price Prediction™ from nets and exchanges
2. Direct Sold Insertion Order Consideration
3. Bids from RTB demand partners

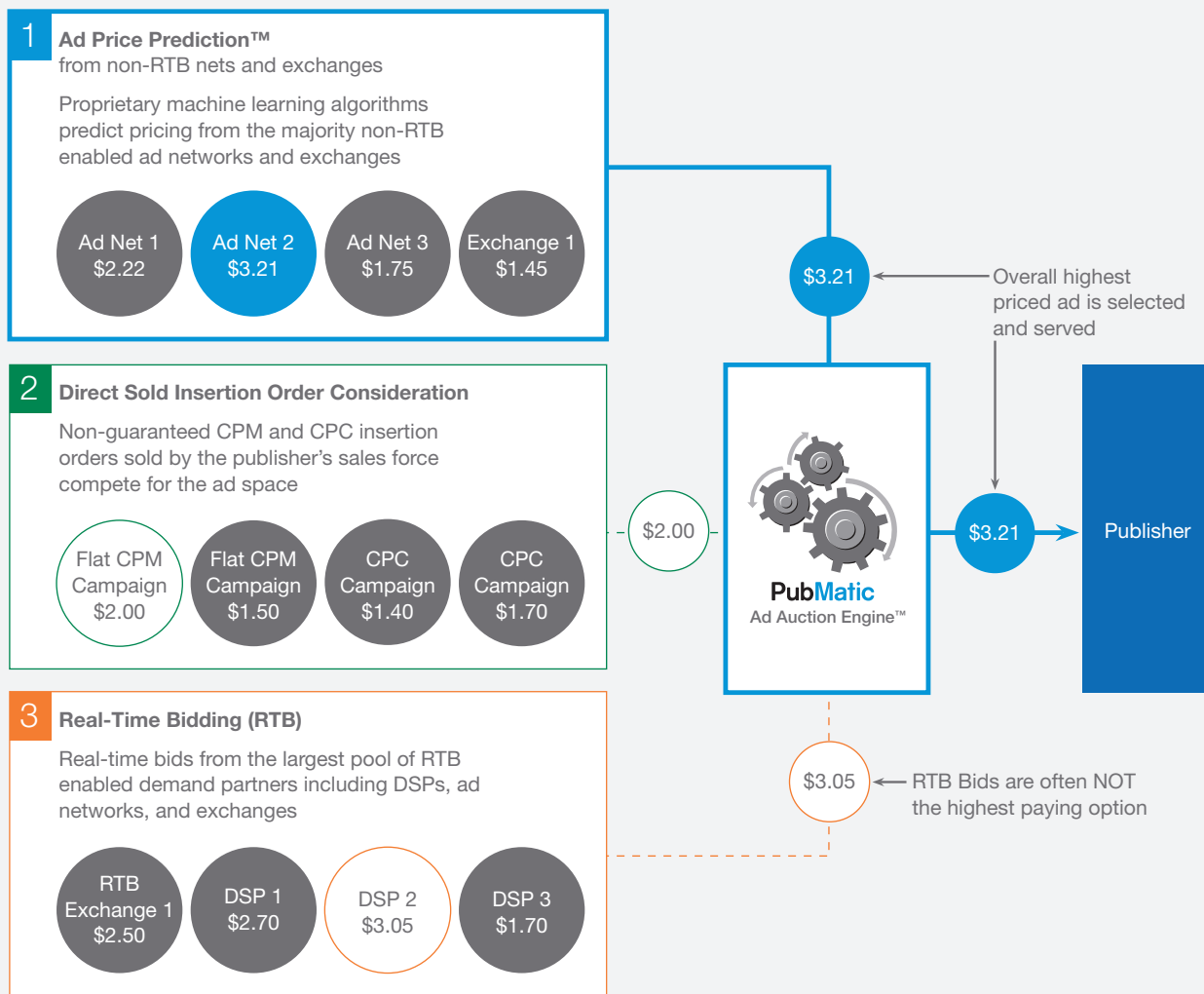
→ Highest overall price wins

When advertisers find the user they want to reach, they are willing to pay a high price to reach that user—but they still want to pay the least amount possible in order to reach that user. PubMatic's Ad Auction Engine™ does not allow any real-time bids to win an auction unless the bid is high enough, as shown in Example 3.

### Example 3: The Ad Auction Engine™ Process Works For Every Impression

An RTB bid only wins if it beats the pricing coming from PubMatic's Ad Price Prediction™ and direct sold insertion orders that a publisher's direct sales team entered into PubMatic's system.

**In this example, the real-time bid of \$3.05 bid did not win. Instead a non-RTB enabled ad network was willing to pay the most for the ad space.**



PubMatic's Ad Auction Engine™ keeps ad prices high for the publisher by bringing together the greatest number of demand sources for each impression, and as a result, real-time bidders often have to increase their bids if they are to win the impressions they want.

Due to the fact that there are far fewer RTB enabled demand partners than non-RTB ad networks and exchanges, in most cases an RTB bidder is not selected to serve an advertisement. In the cases where there are no RTB bidders competing for the publisher impression, PubMatic selects the highest paying ad network or exchange using the proprietary Ad Price Prediction™ process, or chooses to show an ad from a direct sold insertion order if it is the highest priced ad available.

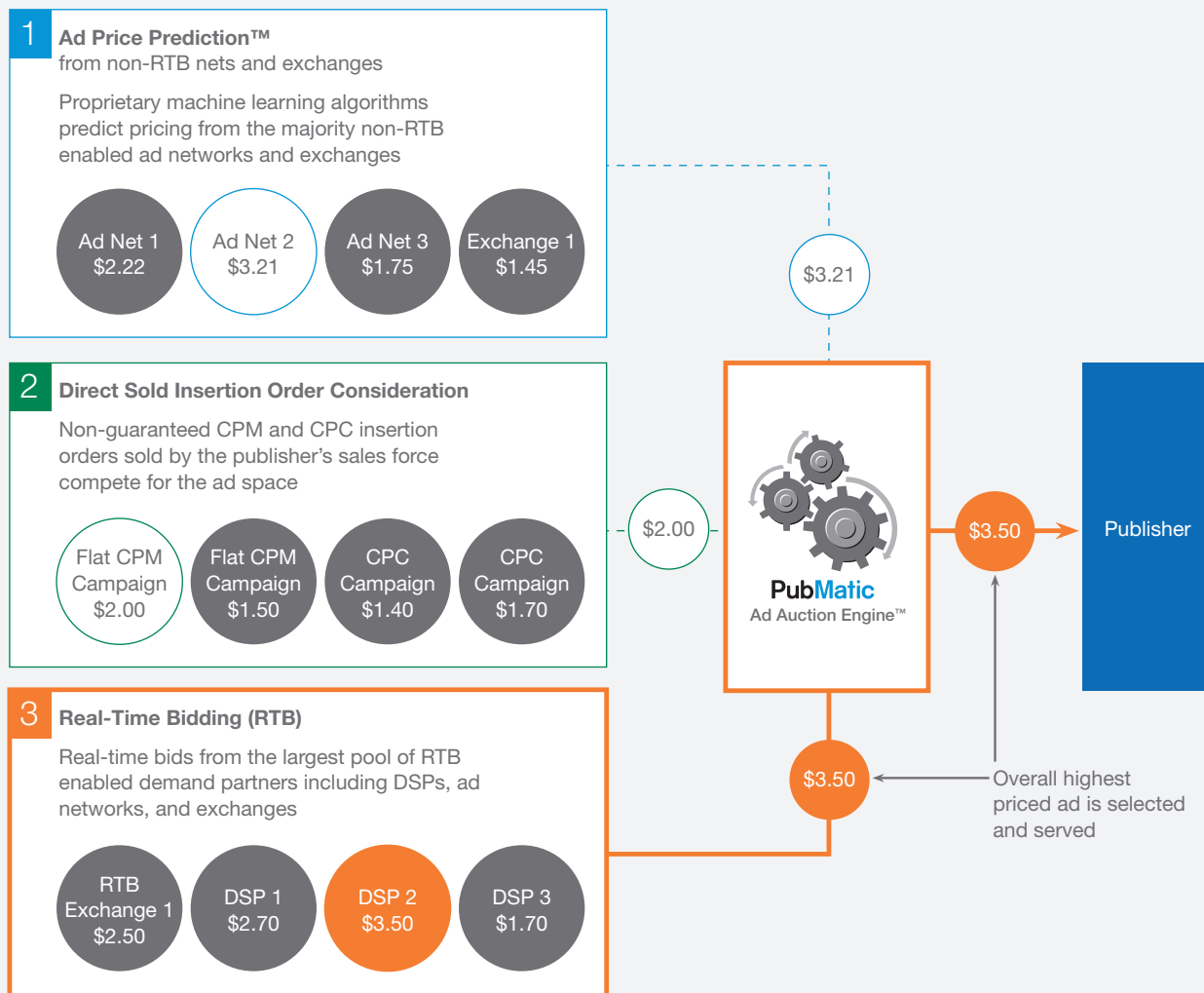
The Ad Price Prediction™ process is powerful technology that was developed over the course of several years by PubMatic's 40+ full time engineers. Download the white paper dedicated to Ad Price Prediction™ to learn more, which can be found at <http://www.PubMatic.com/technology/whitepapers>.

The majority of RTB transactions that PubMatic facilitates on behalf of the publisher are received from companies that have their own campaign optimizing algorithms working the benefit of the advertiser. For example, when a DSP is working on behalf of an advertiser, the DSP continually adjusts its pricing during the course of the campaign in order to reach the right audience at the lowest cost to the advertiser. However, PubMatic's Ad Auction Engine™ keeps ad prices high for the publisher by bringing together the greatest number of demand sources for each impression, and as a result, real-time bidders often have to increase their bids if they are to win the impressions they want.

## Example 4: The Ad Auction Engine™ Competitive Environment Encourages Higher Bids from RTB Partners

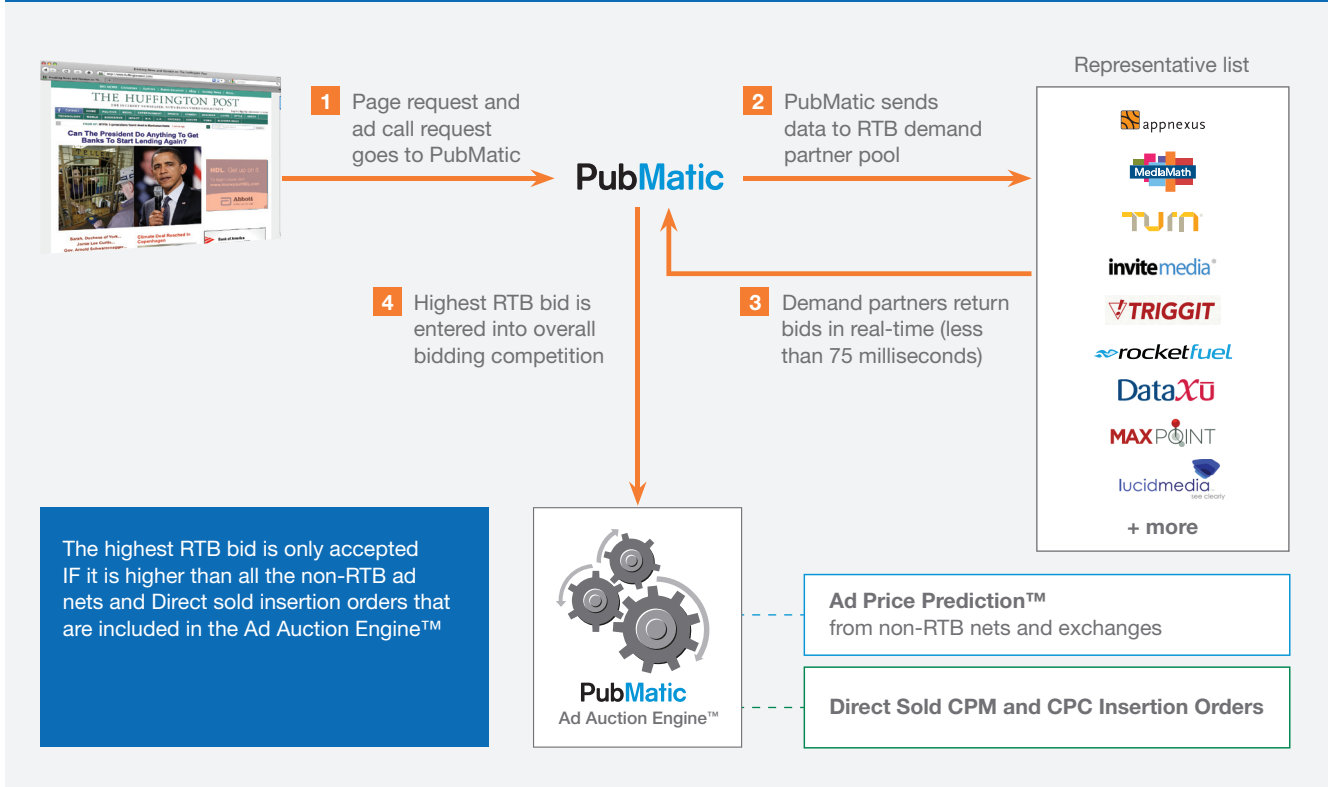
RTB enabled demand partners fine tune their bids during the course of a campaign. If they continually lose auctions due to low pricing, they will increase their bids.

**In this example, the real-time bid did win after increasing the bid price to reach a specific audience.**



It could be several years or longer before there are enough real-time bidders to ensure high pricing for the publisher. However, PubMatic is connected to the greatest number of RTB demand partners of any sell side platform.

## How the RTB Process Works For Each Impression

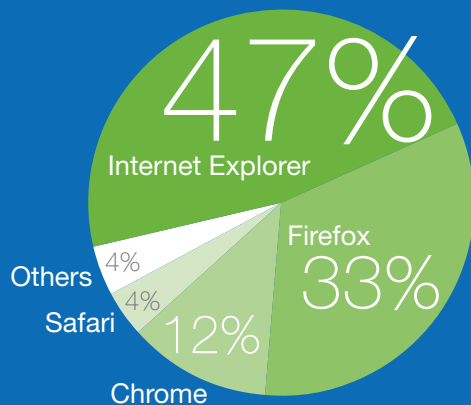


It is critical to include as many RTB partners as possible in order to have the RTB partners increase the percentage of wins they have within the Ad Auction Engine™ process. The number of demand partners that are plugged into PubMatic's API for RTB is continuing to grow at a fast pace and is nearly four times what it was just six months ago. The increase of RTB demand partners will help to increase bid prices, but the Ad Auction Engine™ remains a key part of the bidding process in order to get the most qualified advertisement at the highest price possible for the impression.



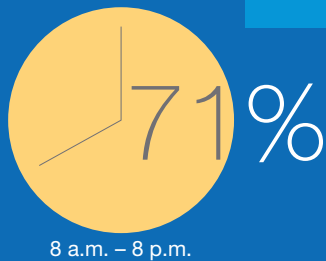
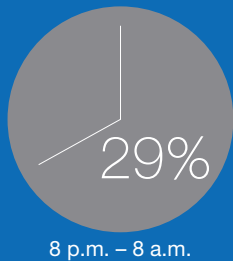
# RTB Targeting\*

728x90 27%

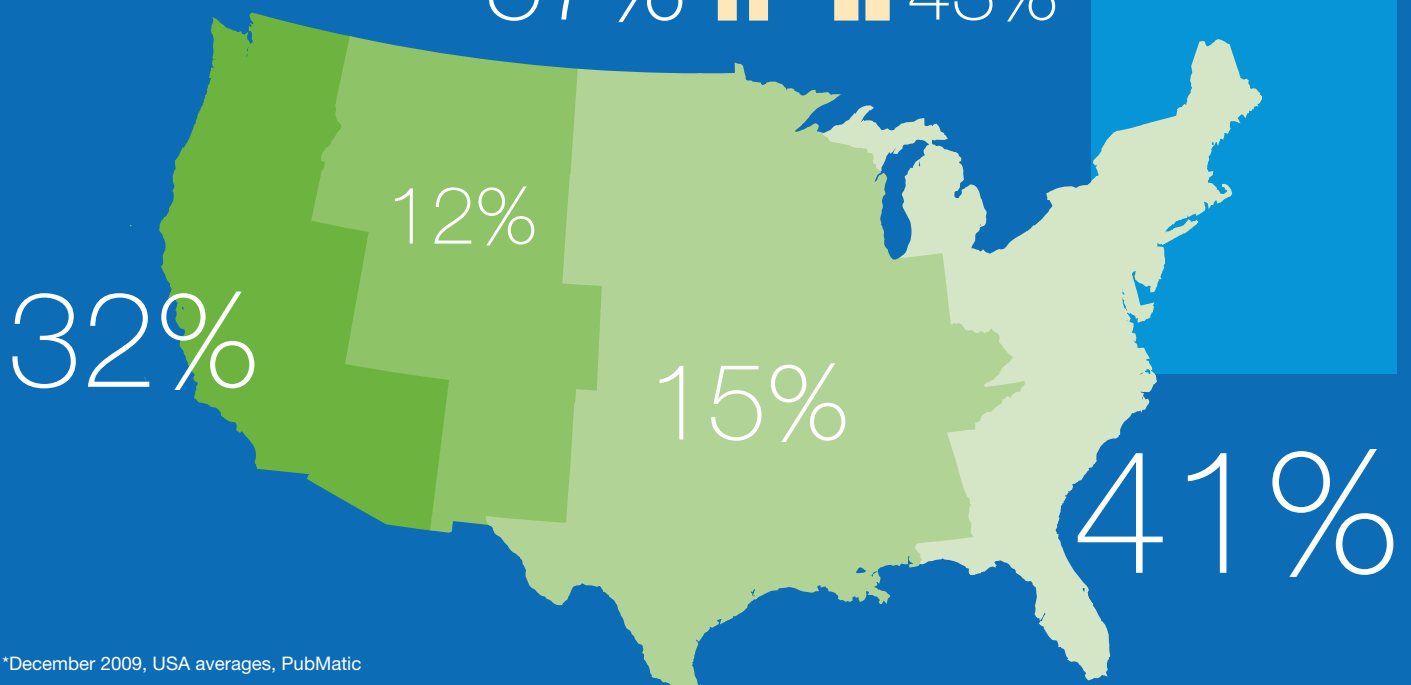
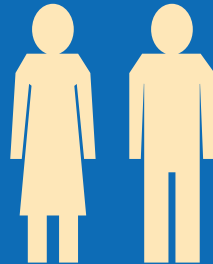


57%  
300x250

16%  
160x600  
and other sizes



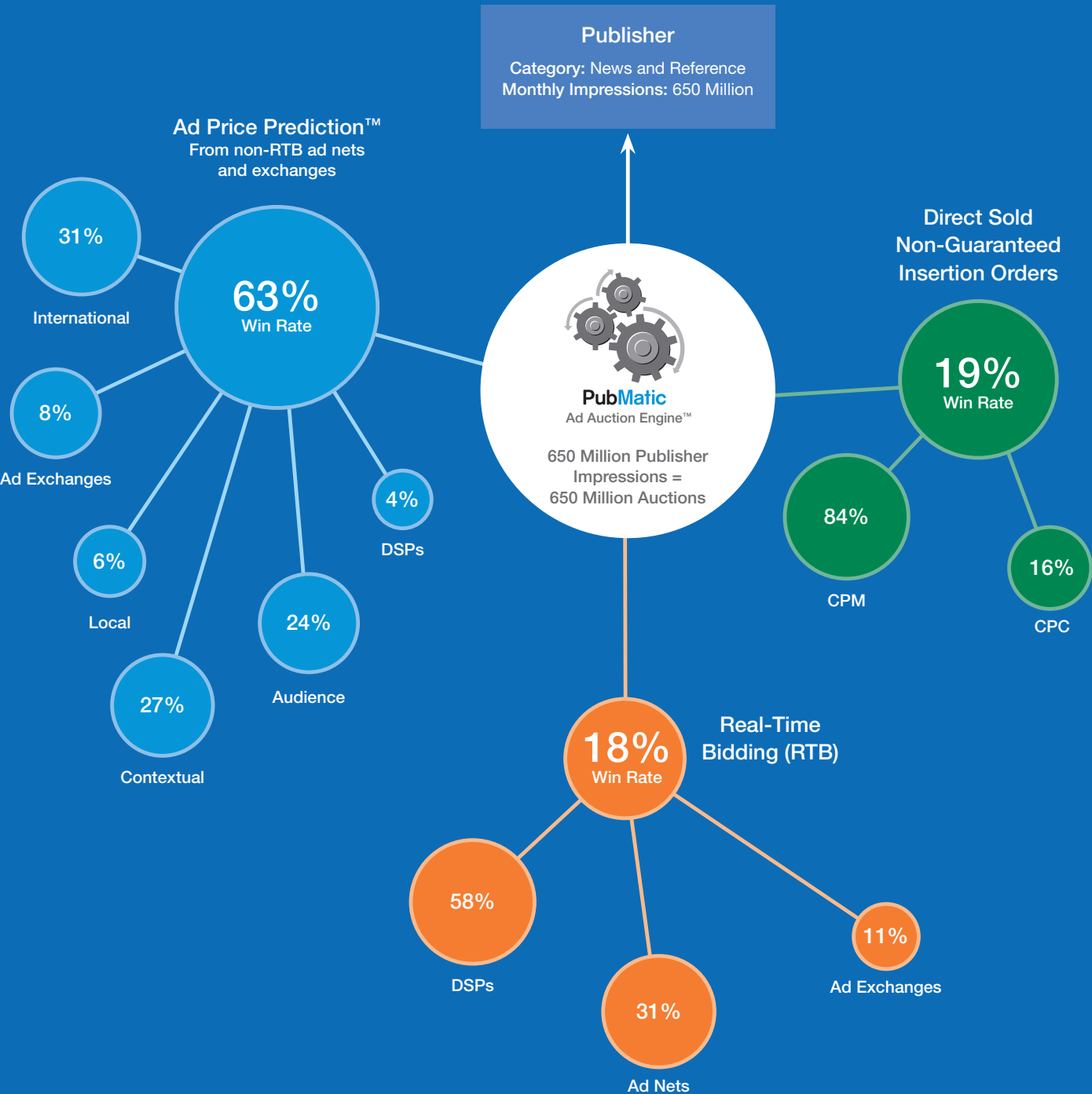
57% 43%



\*December 2009, USA averages, PubMatic

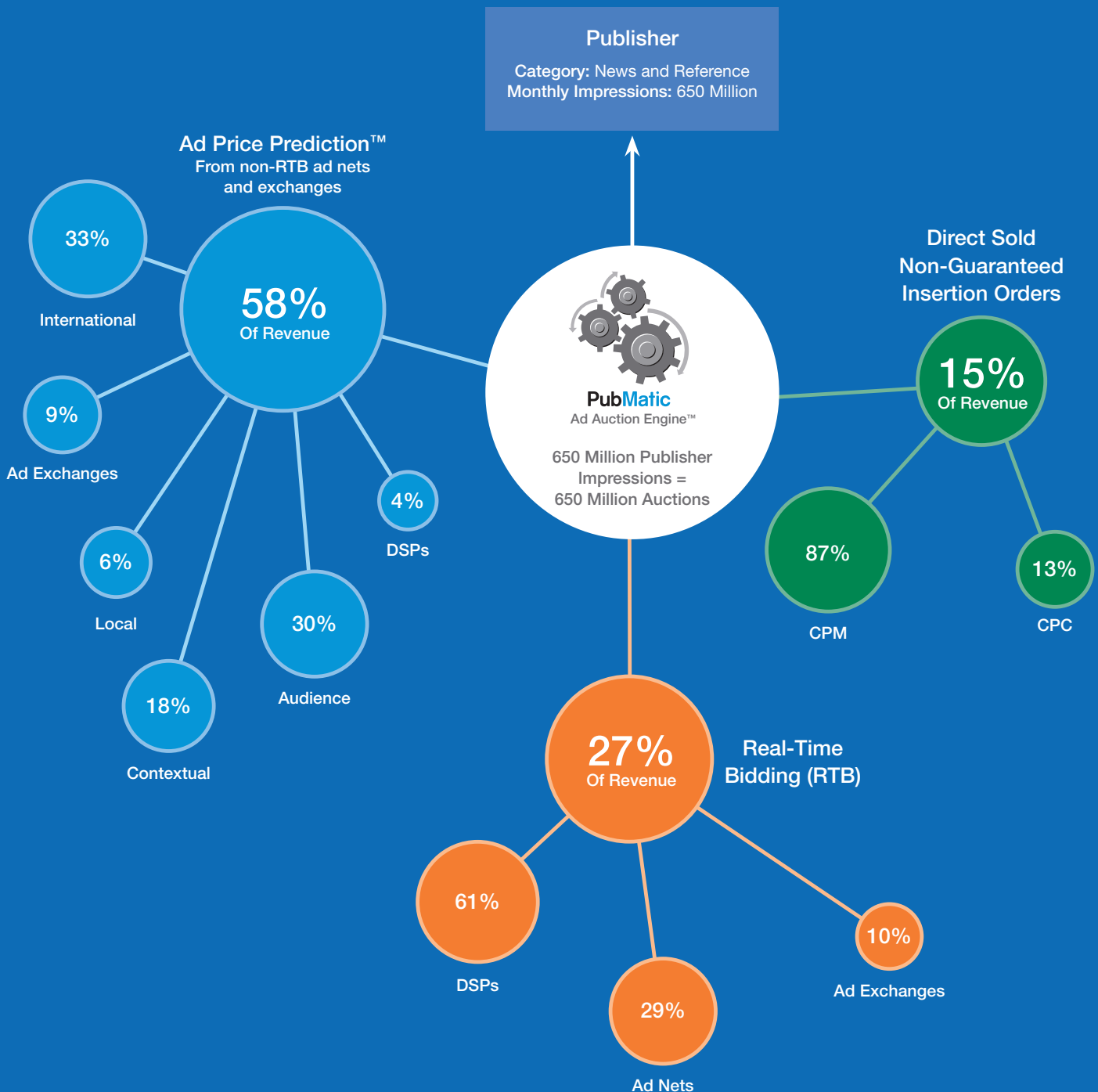
# Filling Impressions By The Numbers

The chart represents an actual PubMatic publisher in December 2009. Every impression that PubMatic facilitates goes through The Ad Auction Engine™. The percentages represent where the highest paying ads are coming from.



# Revenue Distribution By The Numbers

This chart represents the same publisher's data from December 2009. While RTB was only responsible for filling 18% of the impressions that came through PubMatic's Ad Auction Engine,™ it actually represents 24% of the publisher's revenue that did.



# Ensuring RTB Data Safety And Brand Protection

Real-time bidding has the potential to bring significant revenue lift to publishers, but RTB is not without its own brand control and data safety risks. Publishers need to understand that RTB was originally developed for the benefit of the advertiser, and therefore publishers should consider an RTB partner that is a strict publisher advocate and has the tools to protect the publisher.

There are five key considerations that publishers should be thinking about when selecting a partner for RTB:

## **1 Getting The Right Demand Partners From The Start Prevents Most Hassles**

As most publishers know, not every ad network or advertiser is well intentioned. A strict RTB partner vetting process should be required based on the objectives of the publisher.

A publisher's RTB sell side partner should enforce demand partners and advertisers to:

- Meet the minimum RTB technical requirements for ad speed and data safety so that latency and brand control is not a problem
- Actively bid on the RTB platform and meet a minimum number of bid wins each month to ensure that no "data squatters" on the platform
- Comply with regular auditing of data that is collected vs. dollars spent on bidding

PubMatic, for example, has set up a strict Trusted Partner Program™ for RTB and will proactively remove demand partners that do not meet the high expectations set in the agreement.

## **2 The Publisher Should Set The Rules Around What Data Is Passed And Have A Way To Enforce Those Rules**

The publisher owns their own data and publishers need the ability to set rules around which data they pass to a specific bidder. In some cases ad networks or other demand partners will try to collect more information than is needed for the campaign. Publishers should have a way of protecting themselves from data theft.

For example, Data Firewall™, is a proprietary product developed by PubMatic that:.

- Gives publisher total transparency about what data is being passed
- Identifies pixels and tracks if ad network or advertiser is putting pixel on publishers without permission
- Automatically alerts a publisher when demand partners go beyond “normal targeting”

### **3 Screening Ads In Real-Time Process Helps Prevent Unwanted Ads**

Ensuring creative control can be difficult. A publisher’s sell side platform partner should have a creative screening of all advertiser creative on the publisher’s site available to view in real-time. Ideally, the sell side platform has this process built into their UI so that when the publisher logs in they can see the creative that is being shown on their site at that moment.

In order to provide the publisher with a snapshot of what ads are going across their site, or sites, at any given moment, PubMatic offers publishers a Live Creative Dashboard™ that:

- Takes regular screen shots of publisher website in 5-60 minute intervals
- Emails screen shots to PubMatic’s Creative Services Team
- Traces URLs referred to during ad serving
- Reduces manual work of reloading ad tags for checking creative

#### **4 Preventing Unwanted Malware Is Key to A Good User**

##### **Experience**

For the most part, RTB advertisers do not use malware simply because the cost of RTB campaigns are too expensive to waste on such advertising. However, it can happen and an extra safety net should be available to ensure that publishers have maximum safety.

There are now products available for publishers that:

- Automatically scans all ad tags
- Proactively and quickly identify any potential malware
- Alert the publisher if there is a security breach
- Send an email detailing ad calls + URL/Ad Network mapping

Publishers have the option of using the products themselves or partnering with a sell side platform such as PubMatic that has it built in as part of the service.

#### **5 Loading Speed Should Never Be An Issue**

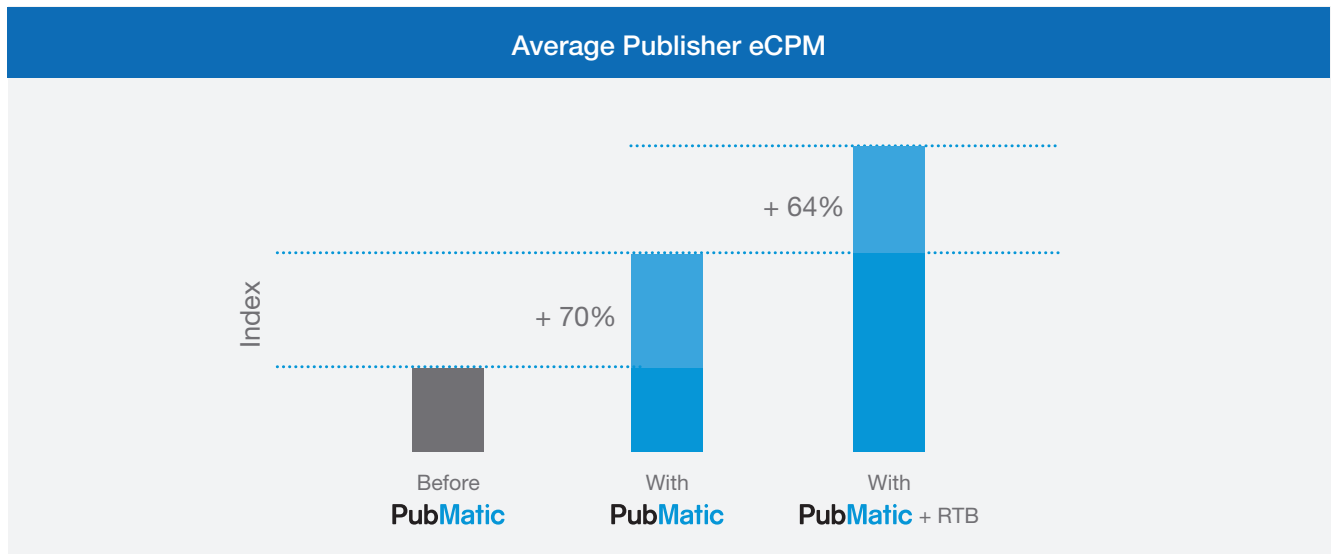
Part of a good user experience is fast loading pages. A global data center footprint ensures that demand partners return bids in milliseconds to ensure positive end-user experience.

Publishers may consider asking their partner about the location of data centers, and ask about:

- Speed delivery times
- How often the speed time is monitored
- Whether or not a third party company verifies the speed time

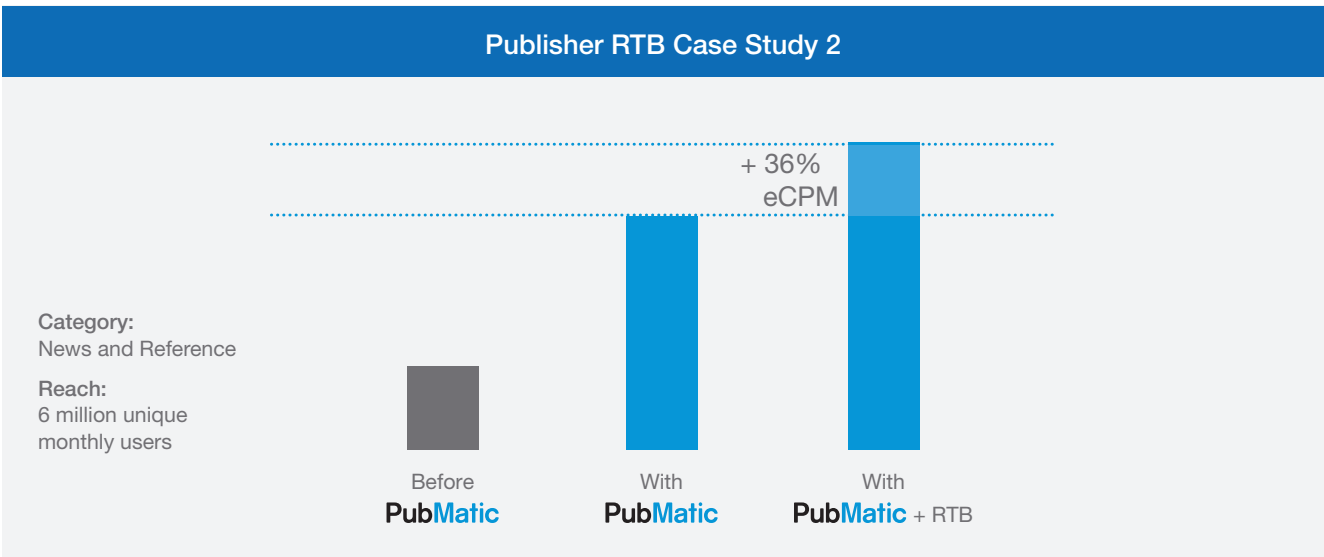
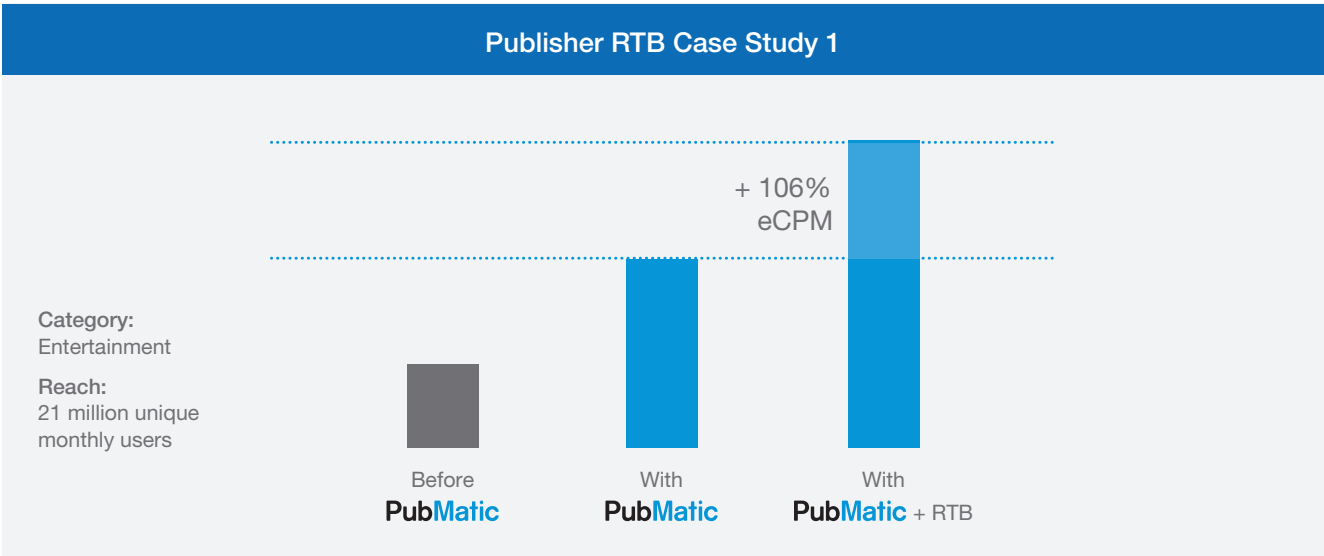
## Publisher Results Using PubMatic to Participate in RTB Campaigns

It is critical to include as many RTB partners as possible in order to have the RTB partners increase the percentage of wins they have within the Ad Auction Engine™ process. PubMatic has been live with real-time bidding since February 2009, and as the first sell-side platform to market with RTB, has been carefully monitoring the results. PubMatic publishers participating in a fixed minimum number of real-time bidding campaigns in 2009 saw an average eCPM boost of 64%.





The following case studies represent PubMatic publishers that have been actively participating in RTB campaigns for at least 6 months to ensure revenue lift was consistent and stable. The eCPMs reflect the averages before using PubMatic, the average using PubMatic without RTB, and using PubMatic with RTB.



# Conclusion

By Bennett Zucker

If advertisers want real-time bidding, publishers should think about real-time selling. And in 2010, we will see more publishers dipping their toes into the RTB pool as they realize its potential to connect them to more great brand advertisers and the opportunity to improve eCPMs for their valuable audiences as well as for their harder to sell inventory.

While a handful of media companies have shut out ad networks or replaced third parties with homegrown networks, many successful publishers—with great brands, experienced ad sellers and the latest technology—still struggle to fill 50% or more of their inventory.

“We have a very high touch sales organization,” an executive of one major publisher says, “and there has tended to be a bias against networks and exchanges.” In spite of intense debate in the company, they have committed to testing. “Some of our inventory is currently biddable on exchanges through our optimizer, and we’re excited about introducing RTB,” he says, adding that early tests seem promising.

He urges publishers to catalog and share successes and best practices. “Every publisher should be testing and getting ready for the day when RTB will become the norm. Otherwise, even now, you’re just leaving money on the table.”

On the buy side, Anthony Rhind, Co-CEO, Havas Digital, recently told CMO.com, “Buying at the impression level, as opposed to the placement level, allows segmentation strategies to be executed with greatly reduced waste. Of course, segmentation must be informed,

so with impression buying comes the need to use data to profile impressions to realize that segmentation. This is where the fusion of contact/customer data with campaign data, site data and profile data becomes critical to directing trading strategies. This is an extremely exciting area for our industry, with major implications for our ability to drive clients' business volumes that are attributed to digital media."

As RTB continues to grow, publishers may earn more for their inventory while also gaining insights into their audience's value that was previously available primarily to the networks. Adding up the possibilities, there may be good reason to expect a five-fold increase in RTB volume this year. As PubMatic's cofounder & CEO Rajeev Goel cautions, "Real-time bidding is still in its infancy, but it is gaining momentum every day. Publishers can't afford to stay on the sidelines and let somebody else figure it out and take home the growing tide of RTB advertising dollars."

“

Publishers can't afford to stay on the sidelines and let somebody else figure it out and take home the growing tide of RTB advertising dollars."

— RAJEEV GOEL  
CEO, PUBMATIC

## About PubMatic:

**Our Mission:** To provide publishers with the greatest control of their ad revenue and brand.

**What We Do:** PubMatic's Ad Revenue Optimization solution combines real-time ad decision technology with local service around the world to provide global publishers a holistic ad monetization platform. PubMatic ensures that online publishers get the most money from their advertising space by leveraging advanced, proprietary technology to decide in real-time which demand source can best monetize each impression. PubMatic also offers brand protection, comprehensive analytics, mobile platform optimization, and ad operations supports for the Web's premium publishers.

Some of the world's most respected online publishers have chosen to work with PubMatic, including The Huffington Post, eBay, United Online, TV Guide, and the majority of the ComScore Top 10.

[www.PubMatic.com](http://www.PubMatic.com)

## Contact Us

Online publishers interested in working with PubMatic should contact:

[Sales@PubMatic.com](mailto:Sales@PubMatic.com)

Ad networks interested in working with PubMatic should contact:

[AdNetworks@PubMatic.com](mailto:AdNetworks@PubMatic.com)

# Annual Ad Revenue Report and Other White Papers from PubMatic



Learn more about the new online advertising ecosystem. Download the Ad Revenue Report at [www.pubmatic.com/adrevenuereport](http://www.pubmatic.com/adrevenuereport)

## Predicting Ad Network Frequency Capping to Increase Publisher Revenue

PubMatic

Technical level of white paper:  
■ ■ ■ ■ ■

- Up to 35% increase in eCPM
- 50-200% increase in CTR
- 10-50% decrease in ad network defaults

## Automating an End to Ad Network Defaulting

PubMatic

Technical level of white paper:  
■ ■ ■ ■ ■

- Dramatically increases publisher eCPMs up to 300%
- Ends publisher reliance on ineffective ad network daisy chains
- Automatically chooses the next highest paying ad network should one default

## Ad Price Prediction: 2nd Generation Ad Revenue Optimization for Publishers

PubMatic

Technical level of white paper:  
■ ■ ■ ■ ■

- Improve monetization of every single publisher ad impression
- Solves ad network defaulting problem for publishers
- Two new technologies improves algorithm accuracy





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